

#23

MONROVIA
86-68

U.I

✓

#23

DRAFT REPORT
PRELIMINARY SITE ASSESSMENT
THE MONADNOCK COMPANY SITE
18301 E. ARENTH STREET
CITY OF INDUSTRY, CALIFORNIA
FOR THE MONADNOCK COMPANY AND
B.F. GOODRICH COMPANY

DAMES & MOORE JOB NO. 15136-001-042
AUGUST 15, 1986

Dames & Moore



Dames & Moore



812 Anacapa Street, Suite A
Santa Barbara, CA 93101
(805) 963-9676 / 963-5976

August 15, 1986

The Monadnock Company
18301 E. Arenth Street
City of Industry, CA 91749

Attention: C.M. Miller
President

B.F. Goodrich Company
Aerospace Division
500 S. Main Street
Akron, Ohio 44318

Attention: J.D. MacGregor
Manufacturing Services Manager

Gentlemen:

Transmitted with this letter is our report entitled, "Draft Report, Preliminary Site Assessment, The Monadnock Company Site, 18301 E. Arenth Street, City of Industry, California for The Monadnock Company and B.F. Goodrich Company," dated August 15, 1986. The report presents the results of our subsurface investigation at the subject site. Included in Appendix B are copies of laboratory analysis reports. A copy of the report has also been transmitted to Mr. Skip Wohl of The Wohl Company.

Based on our findings, we believe that The Monadnock Company should notify the California Regional Water Quality Control Board, Los Angeles Region (RWQCB) that a waste discharge has occurred at the site that could affect the quality of the waters of the state. It is our interpretation that such notice is required by California Law pursuant to Chapter 4, Article 4, Section 13260 of the California Porter-Cologne Water Quality Act. Notice can be provided to the Los Angeles RWQCB by calling and writing the Board at:

(213) 620-5415

California Regional Water Quality Control Board
Los Angeles Region
107 South Broadway, Room 4027
Los Angeles, CA 90012-4596

Corner 1st (near 2nd)

Attention: John L. Lewis
Water Resource Control Engineer

Winnie Deslate

Dames & Moore



812 Anacapa Street, Suite A
Santa Barbara, CA 93101
(805) 963-9676 / 963-5976

The Monadnock Company
August 15, 1986
Page 2

Dames & Moore will be available to provide technical assistance to you in addressing the RWQCB's questions and concerns, and in negotiating with the Board staff, as may be required, to accomplish effective and timely resolution of this matter.

Should you have any questions regarding the notice requirement or our report, please do not hesitate to call us.

Sincerely,

DAMES & MOORE

Thomas A. Vinckier
Senior Hydrogeologist

John G. Dudley
Project Hydrogeologist

TAV/JGD:csk
16.0G/1-Ltr-2

cc: Mr. Skip Wohl

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION.....	1
1.1 PURPOSE OF INVESTIGATION.....	1
1.2 SCOPE OF SERVICES.....	2
2.0 REGIONAL GEOLOGIC AND HYDROGEOLOGIC SETTING.....	3
3.0 SITE LAND USE HISTORY.....	5
4.0 INVESTIGATIVE METHODS.....	9
4.1 HEALTH AND SAFETY PLAN.....	9
4.2 EXPLORATORY BORINGS.....	9
4.3 SURFACE SOIL SAMPLING.....	11
4.4 MONITORING WELL INSTALLATION AND SAMPLING.....	11
4.5 LABORATORY TESTING PROGRAM.....	12
5.0 INVESTIGATIVE RESULTS.....	14
5.1 FIELD OBSERVATIONS.....	14
5.2 ANALYTICAL TESTING RESULTS.....	14
5.2.1 Exploratory Borings and Surface Soil Samples.....	14
5.2.2 Ground Water Samples.....	17
5.3 SITE HYDROGEOLOGIC CONDITIONS.....	19
6.0 CONCLUSIONS AND RECOMMENDATIONS.....	22
7.0 REFERENCES.....	26

TABLES

FIGURES

APPENDIX A: LOGS OF BORINGS

APPENDIX B: LABORATORY ANALYTICAL RESULTS

1.0 INTRODUCTION

This report presents the results of our preliminary site assessment (PSA) for the site owned by the Monadnock Company at 18301 E. Arenth Street, City of Industry, California. Site location and site vicinity maps of the subject property are shown on Figures 1 and 2, respectively. In Sections 1.1 and 1.2 of the report, the purpose of the PSA and the scope of services performed are described. Sections 2.0 and 3.0 describe the regional geologic and hydrogeologic setting (Section 2.0) and the land use history of the site and surrounding area (Section 3.0). These descriptions are based on a review of available geologic and hydrologic literature, available historical aerial photographs of the site and surrounding lands, and on information obtained from the current owner and from staff at various local regulatory agencies. Investigative methods used during our field investigation at the site, including the laboratory testing program for soil and water samples are discussed in Section 4.0. The results of the subsurface investigation and associated Conclusions and Recommendations are provided in Section 5.0 and 6.0 respectively. Finally, a list of literature reviewed and persons contacted during the course of the investigation are provided in Section 7.0.

1.1. PURPOSE OF THE INVESTIGATION

The purpose of this investigation is to evaluate whether contamination by potentially hazardous materials has occurred at the subject site. Two principle investigative objectives of the PSA are:

- ° To review available documentation of land use history at the site for evidence of potential soil and/or ground-water contamination by potentially hazardous materials from past site activities; and,
- ° To perform a limited subsurface investigation to evaluate whether soil and/or ground-water is contaminated at selected that may locations from past activities on the site or on adjacent property.

1.2 SCOPE OF SERVICES

The tasks conducted during this investigation include:

- Research and review of available geologic and hydrogeologic literature and available historical aerial photographs of the site;
- Review of data gathered from the owner and from local regulatory agencies regarding current and past site activities involving materials handling practices and waste discharge;
- Collection and examination of subsurface soil samples at six boring locations on the property in the vicinity of possible sources of subsurface contamination;
- Collection and examination of surface soil samples at three locations of potential contamination;
- Installation of three ground-water monitoring wells on-site, and collection of representative ground water samples from each well;
- Laboratory testing of selected soil and water samples; and,
- Installation of three ground-water monitoring wells on-site, and collection of representative ground-water samples from each well;
- Laboratory testing of selected soil and water samples; and,
- Preparation of a written report presenting our findings, conclusions and recommendations.

2.0 GEOLOGIC AND HYDROGEOLOGIC SETTING

The Monadnock site is located within the Puente basin (Mann, 1986), a relatively narrow alluvium valley through which San Jose Creek flows (see Figures 1 and 2). San Jose Creek drains westward from the Pomona area into the southern San Gabriel Valley. The Puente basin lies between uplifted areas associated with potentially active faults. To the south are the Puente Hills and to the north are the San Jose Hills. Upper Miocene age (about 5-10 million years old) siltstones and sandstones are the dominant rock types which flank the hills in the vicinity of the Monadnock site (Yerkes 1972). These rocks are also inferred to compose bedrock beneath the Puente basin itself.

The alluvial sediments of the Puente basin are gravel, sand, silt, and clay. The basin is atypical compared to others in the greater Los Angeles area in that there is a higher percentage of silts and clays in the alluvial fill. Thickness of the alluvium varies from about 100 feet in the upstream area to about 450 feet where the basin joins San Gabriel Valley (Mann, 1986). During late Pleistocene time (about 11,000 - 250,000 years ago) San Antonio Creek apparently flowed through the valley of Puente basin. During that time, coarse-grained deposits of sand and gravel were laid down along the southern part of the valley, south of the present course of San Jose Creek. The sands and gravels were eventually buried by succeeding deposits of clay as much as 40 feet thick. The buried sand and gravel are the principal aquifer material within the Puente basin.

Earliest recorded water wells in the Puente basin date back to the late 19th century. Many more water wells were developed during the first half of the 20th century. These wells were primarily for local domestic and agricultural uses. Because of the ground-water extractions, and drought conditions during the late 1940's, the water table elevation of the basin declined to its historic low in 1951 (Mann, 1986). In addition, the agricultural activities caused a deterioration in the quality of the ground waters. This deterioration was manifested by an increase in both total dissolved solids (TDS) and nitrate levels within ground waters. According to California Department of Health Services, there are no public water supply wells in the immediate vicinity of the Monadnock site.

The poor quality of the ground water and rapid urbanization of the area has led to a reliance on imported water supplies and a large reduction in ground-water extractions in the Puente basin. Consequently, the water table elevation has risen so that, in some areas, ground water discharges into the lined channel of San Jose Creek. In fact, the ground-water surface in the vicinity of the Monadnock site for fall of 1982 is shown to be at an elevation approaching 400 feet (unpublished ground-water level map for 1982 prepared by the Los Angeles County Flood Control District). The land surface elevation at the site is about 410 to 415 feet mean sea level (MSL). Ground-water flow within the basin is principally from east to west with a small component directed towards the axis of the valley from the surrounding hills. Recent analyses show that TDS and nitrate levels progressively increase in the ground water during its subsurface movement through the basin (Mann, 1986).

3.0 SITE LAND USE HISTORY

Assessment of land use history at the Monadnock site is based on observations of a Dames & Moore geologist during a site visit, as well as discussions with the current landowner, Mr. Charles Miller, and review of data from the following sources:

- Archival aerial photographs within the Whittier College Fairchild Collection and in Dames & Moore's files;
- Records of the County Sanitation District of Los Angeles County;
- Water well records in the files of Los Angeles County Public Works Department, Los Angeles Flood Control District;
- Discussion with personnel at California Department of Health Services, Sanitary Engineering Division; and,

The following public agencies were also contacted for information regarding the Monadnock site, but were unable to provide additional data:

- California Department of Health Services, Toxic Waste Division;
- City of Industry Building Department;
- Los Angeles County Building Department;
- Los Angeles County Public Works Department, Industrial Waste Section; and,
- Los Angeles County Health Department, Hazardous Waste Unit.

Aerial photographic coverage of the site was available for years 1928, 1935, 1945(?), 1949, and 1965 (sources listed in Section 7.0, References). All pre-1965 aerial photographs show the site to be undeveloped agricultural land. On 1928 photographs, several farm-type buildings are present in the southwest corner of the site and along the south boundary. Structures and several additional buildings are also visible in 1949 photographs. Evidence of cultivation on the site was visible on the 1949 photograph. In the 1945 photograph, an oval racetrack-like pattern (dirt surface) is visible in the center of the site. It is unclear what this pattern represents.

The large building which currently houses the Monadnock Company facilities is shown on the 1965 photograph. Little or no paving surrounded the building. Several of the farm-related buildings were still present in the southwest corner of the property. The remainder of the site was vacant and, apparently, uncultivated.

An incised stream channel is visible on all aerial photographs and is tributary to San Jose Creek. The dry channel crosses the site in an east-west direction and is sinuous in plan view. The depth and width of the channel cannot be estimated from the aerial photos alone, however, the channel dimensions were sufficient to require a bridge crossing for an access road to the farm buildings. The 1965 photograph shows that the channel has been filled in across all of the site and that the present Monadnock building is constructed above the former channel. The westward continuation of the channel appears to have a projected intersection with the Monadnock building in the area just north of the present-day clarifier unit.

Records of the Los Angeles County Flood Control District indicate that three water wells existed on the site. Well number 3099A was drilled in 1926 to a depth of 60 feet. Water surface elevations vary from a high of 380 feet in 1929, to a low of 349 feet in 1935. The well is noted to have "sanded up" in 1939. Information on the other two wells, numbers 3099H and 3099J, is very incomplete. Well 3099H was drilled to a depth of 110 feet and had a water level elevation of 386 feet the date of construction in 1962. There are no records of abandonment for these three wells and their dispositions are not known. The former location of the wells is not evident from present site conditions and locations provided in files of the Los Angeles Flood Control District are only approximate. It is believed that the wells were probably located along the south side of the site, as close to San Jose Creek as possible.

According to Mr. Charles Miller, the Monadnock Company bought the site in 1966. The building on the site was originally built in 1963 and housed a ribbon mill from 1963-1965. The owner/operator of the ribbon mill has not been determined. The building itself is rectangular in plan, and is a raised-ceiling,

single-story structure with a concrete floor and walls. Heat-treating, plating, and wastewater clarifying operations are located on the west side of the building. Concrete or AC paving surrounds the building on all four sides out to a distance varying from about 20 to 200 feet. The south half of the site is an undeveloped dirt lot. In the southwest corner of the site is the foundation for one of the farm related buildings which was noted from aerial photos.

Files at County Sanitation District of Los Angeles contain information relating to a permit for the Monadnock Company to discharge wastewater to the public sewer system. The earliest records documenting Monadnock's practice on this matter date back to January, 1980. Although there is mention in the file that, prior to 1979, enforcement actions were pending against the facility for excess levels of chromium (Cr) and Cadmium (Cd), there are no specific records detailing the nature of any enforcement actions contemplated. Permit 3287 was issued January 1980 to TRW-Cinch, Monadnock Division specifying conditions for discharging wastewater from barrel plating to the sanitary sewer. Permit 8959 to discharge wastewater to the sewer system was then issued December 2, 1981 to Monadnock Company after TRW-Cinch apparently relinquished their interest in the company to the present owner. Wastewater constituents noted in the permit include Cd, Cr, cyanide (CN), Zinc (Zn), and acid. Discharge to the sewer was listed as approximately 3500 gallons per day (gpd). Other chemicals noted as being handled at the facility include chlorine bleach (hypochlorite) sodium hydrofide, cadmium hydroxide, sodium cyanide, nitric acid and zinc chromate (both yellow and green). The permit stipulated that periodic laboratory analyses be performed on the wastewater and that these analyses be provided to County Sanitation Districts. The constituents to be tested for and reported on the Critical Parameter Report included CN, Cd, Cr, Zn, oil and grease, and pH. Excerpts from several of these Critical Parameter Reports are shown on Table 1.

Records of the County Sanitation District indicate that wastewater discharged into the sewer system by Monadnock had levels of CN and Cd which periodically exceeded U.S. Environmental Protection Agency (EPA) maximum concentrations as specified in 40 CFR-Part 413. Maximum concentrations specified by EPA are 5 parts per million (ppm) and 1.2 ppm, respectively, for CN and Cd. An example cited for violation of standards was the wastewater sample

obtained on October 8, 1985 which yielded 7.0 milligrams per liter (equivalent to parts per million) CN and 1.65 milligrams per liter Cd. Refer to Table 1 for additional laboratory analyses. Final Notice of Violation #2165 was issued by the County Sanitation Districts to Monadnock on October 21, 1985 as a legal notice "of serious or persistent violation" of District Ordinance #210 and EPA Pretreatment Standards. There was also concern for the lack of a spill control system for the wastewater clarifier.

Monadnock Company apparently was able to resolve this problem of high CN and Cd levels in their wastewater discharge for they were issued Industrial Waste Discharge Permit 8959 R-1 on December 10, 1985. The company has also constructed a spill containment wall around their wastewater clarifier. Recent analysis (2/3/86) of a wastewater sample can be compared with older results on Table 1.

4.0 INVESTIGATIVE METHODS

Methods and procedures used to collect data during our subsurface investigation are described in this section. Specific procedures and protocols are described for both subsurface and surface soil sampling, and for monitoring well installation and sampling. The laboratory testing program applied to soil and water samples submitted for chemical analysis is also presented.

4.1 HEALTH AND SAFETY PLAN

A Health and Safety Plan was developed prior to implementation of field activities at the site. The purpose of the Plan was to establish health and safety procedures, including personnel protection protocols. Staff responsibilities, and contingencies measures to address unanticipated hazards and/or accidents that could arise during drilling and sampling were also set forth in the Plan.

4.2 EXPLORATORY BORINGS

Nine exploratory borings were drilled and sampled to assess subsurface conditions at the locations indicated on Figure 3. Six of these borings were drilled to a depth of about 10 feet and were used to obtain soil samples for chemical analysis. The other three borings were drilled to a depth of about 50 feet, sampled for delineation of subsurface stratigraphy and ultimately completed as ground-water monitoring wells (Section 4.4).

Each boring was drilled using 8-inch diameter hollow stem auger drilling equipment. A continuous log of the soils penetrated during drilling was recorded by a Dames & Moore geologist (see Appendix A). Soils were categorized in accordance with the Unified Soil Classification System (Figure 4).

During drilling, undisturbed soil samples were collected at approximately 1, 5, and 10 foot depths below ground surface (bgs) using a split-spoon drive sampler lowered through the hollow stem of the auger. The sampler was driven 18 inches with a standard 30-inch drop of a 140-pound hammer. Hammer blow counts were recorded every 6 inches over the 18-inch interval. The sampler was fitted with four 2.5-inch diameter, 3-inch long stainless steel sleeves.

Soil samples were monitored in the field for organic vapor emissions using a HNu Model PI101 portable photoionization detector (HNu). The HNu was calibrated to a hexane gas standard before initiating monitoring each day. The samples were monitored by recording peak HNu readings while separating the stainless steel sleeves. Organic vapor emissions are recorded on the boring logs (see Appendix A) in photoionization detector units. The HNu was also used to monitor organic vapors in cuttings during drilling and inside the hollow stem of the auger. Subsequent to drilling each interval the HNu probe was lowered approximately one foot into the hollow stem of the auger.

Subsequent to vapor monitoring, a portion of the sample was placed in a plastic end cap, mixed with a small amount of distilled water for soil pH determination. Soil pH measurements were recorded on the boring logs (see Appendix A). The exposed ends of two sample sleeves were then wrapped with teflon sheeting and covered with tight-fitting plastic end caps. The end caps were then secured to the stainless steel sleeves with electrical tape. Chain of custody, seals and sample labels were placed over the end caps. Sample labels included the following information: (1) boring number; (2) sample number; (3) date; (4) collector name; (5) owner; and (6) location. Samples were stored in the field in ice chests cooled with dry or blue ice. Samples picked up in the field by Chemical Research Laboratories, of Stanton, California using standard chain of custody procedures. The completed chain of custody forms were retained by Dames & Moore following receipt consignment of the samples to the analytical laboratory.

During drilling of the three 50-foot borings undisturbed soil samples were collected at approximately 5-foot intervals starting at a depth of 10 feet bgs. A 1-inch diameter standard penetration test sampler was used to retrieve soil samples for visual examination by the Dames & Moore Geologist. These samples were used only to assess subsurface stratigraphy, and were not retained for chemical or physical analyses.

Prior to advancement of each boring, the downhole equipment (including auger sections and samplers) was steam cleaned to prevent cross-contamination

from the previously drilled boring. Split-spoon sampling equipment was washed in a trisodium phosphate (TSP) solution and triple-rinsed in fresh tap and distilled water before retrieving each sample.

Excess soil cuttings from Borings 1-5 were backfilled into the drill holes; Cuttings from Boring 6 and the 50-foot borings were placed in 55-gallon drums and left at each drillsite for disposal by the Monadnock Company.

4.3 SURFACE SOIL SAMPLING

Three surface or near surface soil samples were collected at the locations shown on Figure 3. Samples were collected with a stainless steel scoop into sterilized glass wide mouth jars. Sampling equipment was cleaned with TSP solution and triple-rinsed with fresh tap and distilled water before retrieving each sample. Samples were sealed in the field and stored in an ice chest cooled with dry or blue ice. Samples were consigned to Chemical Research Laboratory under proper chain of custody procedures.

4.4 MONITORING WELL INSTALLATION AND GROUND WATER SAMPLING

Monitoring wells were completed in the deep borings as shown on the well construction diagrams which accompany the boring logs in Appendix A (Figures A-1 through A-5). Wells were constructed of 4-inch diameter, Schedule 40 flush threaded joint PVC well casing and screen. Horizontally machine-slotted screen (0.020-inch slots) extends from the total depth of each well to several feet above the estimated water table surface based on observations made during well drilling.

Well materials including PVC casing and screen, sand filter packs, and bentonite seals were installed through the hollow stem of the auger. The screened interval in each well was filter packed with prewashed, #3 Monterey sand from total well depth to approximately 3 feet above the top of the screened interval. An approximately 2-foot thick bentonite seal was placed above the filter pack using 1/2 inch bentonite pellets. After removing all auger equipment from the borehole, the remaining annular space was backfilled with a concrete/ bentonite mixture. Each well casing was cut off just below ground surface, fitted with slip-on PVC cap, and enclosed in a steel sleeve with a locking lid. The steel

sleeves were encased in a metal monument box with a screw-mounted lid and finished at grade with concrete. Well elevations were surveyed following completion of the wells.

The ground-water monitoring wells were developed by bailing until the produced water was relatively free of sediment. Well development was continued until the pH, conductivity, and temperature of the produced water stabilized. Water produced during development was retained in DOT approved 55-gallon drums.

The ground-water monitoring wells were sampled immediately following well development. Water samples were collected using a clean teflon bailer. Care was taken to prevent aeration of the water sample while filling sample containers. Sample container lids were sealed with chain of custody stickers. Sample labels with the following information were affixed to each container: (1) well number; (2) sample number; (3) date; (4) collector name; (5) owner; and, (6) location. Samples were stored in the field in ice-chests cooled with blue ice. Samples were transferred to the analytical laboratory in accordance with strict chain of custody procedures.

4.5 LABORATORY TESTING PROGRAM

Selected soil samples collected from the borings, the surface soil samples, and the ground-water samples were analyzed by Chemical Research Laboratories of Stanton, California. The laboratory testing program for both soil and water samples is described in Table 2. All analyses were performed in accordance with established EPA procedures as follows:

- | | |
|--|---|
| • Volatile Organics (Soil) | EPA Method 8240 |
| • Volatile Organics (Water) | EPA Method 624 |
| • Metals (Priority Pollutant and CAM)
(Soil) | EPA Method 6010 (ICP) and
Atomic Absorption Protocols |
| • Metals (Priority Pollutant and CAM)
(Water) | EPA Method 200.7 (ICP) and
Atomic Absorption Protocols |

- Cyanide (Soil) EPA Method 9010
- Cyanide (Water) EPA Method 335.2
- Total Recoverable Petroleum EPA Method 418.1
Hydrocarbons (Soil)
- Pesticides (Soil)
 - Organochlorines EPA Method 8080
 - Organophosphates EPA Method 8140

It should be noted that the detection limits for analytes vary considerably from sample to sample. This variation is related to the concentration of contaminants in each sample. Samples that contain relatively high concentrations of contaminants are diluted in the laboratory in order to achieve adequate resolution of the component species in the sample. This dilution results in a corresponding increase in the analytical detection limits for that sample.

5.0 INVESTIGATIVE RESULTS

The results of our subsurface investigation are presented in this section. Comparisons of the analytical data with regulatory numerical standards are made to assist the reader in appreciating the significance of the results. Brief discussions including conclusions and recommendations are also provided to place the results in proper perspective. A summary of our conclusions and recommendations is presented in Section 6.0.

5.1 FIELD OBSERVATIONS

Pertinent observations made during the exploratory boring program are summarized on the boring logs (see Appendix A). Soils at the site generally consist of about 8-10 feet of silty or sandy clay underlain by various mixtures of clay, silt, sand and gravel.

The pH of samples ranged from about 6.8 to 8.3 and did not suggest the presence of large amounts of highly acidic or highly basic compounds in the soils. Vapor concentrations (PID units) above background were encountered only in Boring 6 which was drilled in an area of discolored soils near the drum storage area. Concentrations generally decreased with depth as shown on Figure A-2, Appendix A. The presence of vapor concentrations at Boring 6 may be related to former leakage/spillage of drums which are/were stored nearby. The surface discoloration of soils in this area also suggests that leakage or spillage of drummed materials may have occurred. Obvious surface discoloration of soil is confined to a localized area just west of the drum storage area. A description of each surface soil sample collected for analytical testing is provided in Table 3.

5.2 LABORATORY TESTING RESULTS

5.2.1 Exploratory Borings and Surface Soil Samples

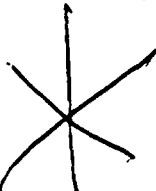
The results of the chemical analyses obtained on the selected soil samples submitted for testing from the 6 soil borings and 3 surface sampling stations are summarized in Table 4 (see Figure 3). Only those contaminants detected in

concentrations above a typical background concentration in one or more of the samples are listed in Table 4. Laboratory report forms providing a complete listing of the analytical results are presented in Appendix B.

Old Drum Storage Area

The results of laboratory testing on the soil samples indicate that soil contamination is present on the south (Boring B-6) and west (surface Sample S-1) sides of the old drum storage area located south of the main plant building (see Figure 3). Contamination is also present in the surface soil sample, S-2, collected from the debris pile along the northern margin of the dirt lot.

Samples collected and analyzed from the 3-foot and 10-foot depths at B-6 indicate detectable concentrations of four volatile organic species:

- 
- ° Tetrachlorethene (PCE),
 - ° Trichloroethene (TCE),
 - ° 1,1,1 Trichloroethane, and
 - ° 1,1,2 Trichloroethane

These organic liquids are commonly used as solvents for degreasing and cleaning metal surfaces and for many other industrial uses. All four compounds are on the Environmental Protection Agency's (EPA) list of Priority Toxic Pollutants.

As shown on Table 4, the concentration of these contaminants is substantially lower in the sample collected from 10 feet bgs than in the 3-foot sample. This indicates that the source of the contamination was likely at the ground surface, possibly from accidental or intentional spillage from drums stored in the area.

The relatively high concentration of petroleum hydrocarbons found in the surface sample S-1 may be related to either spillage from the old drum storage area, and/or spillage from an area directly south of the main plant building where an apparent oil-stained area is visible. The pavement in this area is discolored as far south as the dirt lot where sample S-1 was taken. Additional samples for volatile organic analysis (EPA Method 8240) should be collected in this area as part of the program to evaluate soil contamination in the vicinity

of the old drum storage area.

It should be noted that only 20 ppm of total petroleum hydrocarbons were detected in the sample collected at the 1-foot depth from B-4. This boring was made through the pavement within the area of apparent-oil staining. The laboratory results indicate there has been little or no soil contamination beneath the pavement in this area.

Based on the available data, it is likely that contaminated soil will need to be excavated from the vicinity of the old drum storage area and either treated on-site, or disposed of as hazardous waste at a Class I Waste Disposal Facility. Based on the results from the 10 foot sample, it is likely that excavation of soil below the 10-foot depth will not be required by regulatory agencies. However, additional soil sample should be collected in the vicinity of the old drum storage area and analyzed in the laboratory to better define the lateral and vertical extent of soil contamination in this area. Once these data are collected and provided to the California Department of Health Services (DHS), remedial measures can be designed, approved and implemented to address this soil contamination.

Debris Pile

A second area of soil contamination is indicated to be present along the northern border of the undeveloped dirt lot. High concentrations of three metals (cadmium(Cd), lead(Pb), and zinc(Zn)) and Cyanide(CN) were detected in the surface soil sample S-2 (see Table 4 and Figure 3).

The DHS considers any material which contains certain trace elements (including the heavy metals Cd, Pb and Zn to be a hazardous waste if: (1) the total concentration of any listed constituent exceeds the Total Threshold Limit Concentration (TTL) for that constituent; or, (2) the extractable concentration (in mg/l), as determined by a Waste Extraction Test (WET) exceeds the respective Soluble Threshold Limit Concentration (STLC) for that constituent. These regulatory criteria for defining a hazardous waste are contained in Title 22, Division 4, Chapter 30, Article 11 of the California Administrative Code.

Presented below are the STLC and TTLC values from Article 11 of Title 22 for Cd, Pb and Zn. Currently no STLC or TTLC limits have been established for CN.

<u>Metal</u>	S-2		S-2	
	<u>WET</u>		<u>Total ppm</u>	
	<u>Results mg/l</u>	<u>STLC mg/l</u>	<u>Results</u>	<u>TTLC ppm</u>
Cd	41.6	1.00	304	75
Pb	4.4	5.0	31	1000
Zn	270	250	1850	5000

*High
or
Border*

Comparison of these values with the reported concentrations in Sample S-2 shows that the TTLC for Cd is a substantially exceeded in S-2. Similarly, the STLC for Cd is substantially exceeded in the sample. The soluble concentration of Zn also slightly exceeds the STLC for that metal in S-2. These data indicate that the material in the debris pile at the S-2 location are hazardous based on the regulatory criteria in Article 11.

It is likely that the high metals concentrations are confined to the debris and perhaps to the upper several inches of soil beneath the debris. It is recommended that the debris and several inches of soil below the debris be excavated and disposed of as hazardous waste at a Class I Waste Disposal Facility. The area should then be resampled to verify that no residual metals are present in concentrations exceeding regulatory limits.

5.2.2 Ground-Water Samples

Before presenting the water quality data, it is important to briefly explain the occurrence and movement of ground water beneath the site. Ground water in the uppermost saturated zone occurs beneath the site under unconfined or water table conditions at depths ranging from about 27 to 32 feet below the surface. Groundwater flow in the uppermost saturated zone occurs toward the west (N80° to 85°W) as shown on Figure 5. This means that both monitoring wells MW-1 and MW-3 are hydraulically upgradient of the existing improvements on the

site. Monitoring well MW-2 is positioned hydraulically downgradient of the area surrounding the main plant building. A more detailed discussion of site hydrogeologic conditions is presented in Section 5.3.

The results of the chemical analyses performed on the ground-water samples collected from the three on-site monitoring wells are summarized in Table 5. Laboratory analyses were performed for volatile organic contaminants by EPA Method 624, and trace metals using standard EPA-ICP and atomic absorption procedures. Only those contaminants detected in concentrations above a normal level are listed in Table 5. Laboratory report forms providing a complete listing of the laboratory analyses are presented in Appendix B.

No inorganic contaminants were detected in unusual or elevated concentrations in any of the three ground-water samples. Three volatile organic species were detected in MW-2. No volatile organic species were detected in either MW-1 or MW-3. The three species detected in MW-2 are:

- ° Trichloroethene (TEC),
- ° Tetrachloroethene (PCE), and
- ° 1,1 Dichloroethene

The detected concentrations of these contaminants in the shallow ground water are significant. On the basis of available data on regional and site hydrogeology (see Sections 2.0 and 5.2) the pattern of ground-water contamination indicates that a local (on-site) source likely represents the source of the observed ground-water contamination in MW-2. This is a tentative conclusion that must be confirmed by the installation and sampling of additional monitoring wells.

The objectives of an expanded ground-water monitoring program at the site are:

- ° To identify the source(s) of ground-water contamination, both on-site and offsite;

- To evaluate and characterize the vertical and lateral distribution of any identified plumes of contaminated ground-water in the site vicinity; and,
- To provide data necessary to evaluate ground-water remediation measures applicable to the site-specific conditions.

At least two possible sources of the observed ground-water contamination may be identified on the basis of available information. One of these sources is the known area of contaminated soil adjacent to the drum storage area south of the main plant building. The sewer line extending from near the south west corner of the main plant and extending southward toward Arenth Street represents another possible source of subsurface contamination. Additional potential past or existing sources may have existed or exist inside the main plant building. Additional monitoring wells installed to further evaluate the character and extent of ground-water contamination at the site should be strategically positioned to assess the contamination contribution from the various potential sources.

5.3 SITE HYDROGEOLOGIC CONDITIONS

Sediments to a depth of 50 feet at the site are generally heterogeneous mixtures of sandy or silty clay with interbedded poorly sorted silty sands and gravelly silts and clays. The upper 8 to 10 feet of soil is a unit consisting of fine-grained silt or sandy clay. From 10 to 30 feet below land surface the sediments consist of predominantly poorly sorted sand and sandy gravels with some silts and clayey sand/silt and gravel mixtures. Fine grained sandy and silty clays with some gravelly clay interbeds and silty sands and gravels occur in the interval from 30 to 50 feet below the ground surface (bgs).

These sediments are fluvial deposits deposited along the length of the westwardly flowing San Jose Creek. The creek channel is adjacent to the southern border of the site, south of, and parallel to Arenth Street (see Figures 2 and 3). The total thickness of the alluvial sediments in the vicinity of the site is unknown.

Ground water in the uppermost saturated zone occurs beneath the site under unconfined or water table conditions at depths ranging from about 27 to 32 feet bgs. The water table surface, as measured in the three on-site monitoring wells on August 6, 1986 (see Figures 3 and 5) occurs at an elevation ranging from about 381 feet along the eastern border of the site to 378 feet mean sea level (msl) along the western site boundary. Ground-water flow in the uppermost saturated zone occurs toward the west (N80° to 85°W) at a gradient of about 0.0007 ft/ft, as shown on the Ground-Water Contour Map (Figure 5).

This gradient is consistent with the regional hydrogeologic framework. Ground-water flow is approximately parallel to and slightly toward San Jose Creek. It is likely that ground water discharges into San Jose Creek at some distance to the west of the site. However, visible discharge may not occur directly into the lined channel of the creek, because the channel is constructed with a subdrainage system beneath the concrete lining.

The predominantly fine grained character of the alluvial sediments in the upper 20 feet of the saturated zone substantially limits the capacity of these saturated sediments to yield useful quantities of water to wells. The sustainable yield of the on-site monitoring wells is probable on the order of a few gallons per minute or less. Similarly, the natural ground-water flow velocities through these material is likely quite slow. Based on the water table gradient of 0.007, an assumed effective porosity of 0.25, and an assumed hydraulic conductivity characteristic of silty sands (0.03 to 3 ft/day, from Freeze and Cherry, 1979), the ground-water flow rates are calculated to range between less than 1 to about 30 feet per year toward the west.

It should be noted that actual ground water velocities will be significantly higher in discrete sedimentary units with high permeabilities. For example, in a coarse-grained sand and gravel layer, flow velocities may exceed 1 mile per year.

The pattern of ground-water contamination at the site is generally consistent with the site hydrogeologic conditions. On the basis of the available data, it appears that the observed contamination in samples collected

from the downgradient well MW-2 results from a local on-site contaminant source or sources. Additional monitoring wells and ground-water sampling should be conducted at the site to confirm this tentative conclusion, and to better define the extent and character of the contaminant source(s) and ground-water contamination.

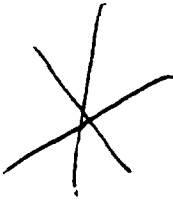
6.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on our evaluation of all the information assembled during the investigation. Our conclusions are discussed under three general topics: (1) soil contamination by Priority Pollutant Volatile Organics, (2) soil contamination by metals and cyanide, and (3) ground-water contamination.


Soil Contamination by Priority Pollutant Volatile Organics

- Detectable concentrations of four volatile organic contaminants were found in soil samples collected from one of the six exploratory borings (B-6) at the site.
- Numerical regulatory standards establishing threshold limits for defining what constitutes a hazardous waste currently exist for only ~~one of~~ these four organic species, Trichloroethene (TCE).
- The concentrations of TCE in two soil samples collected and analyzed for volatile organics from B-6 were both less than the STLC and TTLC values for TCE set forth in the CAC, Title 22, Division 4, Chapter 30, Article 11.
- The volatile organic with the highest concentration in the two samples collected from B-6 is Tetrachloroethene (PCE).
- While no regulatory limits have been established for PCE in soil, state regulatory agencies including the Department of Health Services (DHS) and the Regional Water Quality Control Board (RWQCB) will establish threshold limits for defining what constitutes a hazardous waste on a site-specific basis.
- It is likely that contaminated soils in the vicinity of B-6 will have to be excavated to a depth of less than 10 feet either treated on-site, or containerized and transported for disposal as hazardous waste at a Class I waste disposal facility. Some form of insitu treatment/recovery may also be possible.

- Y
- It is believed that the source of contaminated soil near B-6 is spillage of solvents from drums stored on a concrete pad south of the main plant building.

- 
- It is recommended that 6 to 10 additional exploratory borings be drilled and soil samples collected in the vicinity of the drum storage area. Selected samples from the borings should be analyzed for volatile organics in order to assess the vertical and lateral extent of soil contamination in this area. This information is needed to estimate the volume of contaminated soil.

Soil Contamination by Metals and Cyanide

- Elevated concentrations of Cd, Pb, Zn and CN were detected in one surface soil sample (S-2) collected from the debris pile situated along the northern border of the vacant dirt lot.
 - The concentrations of total Cd and soluble cadmium in sample S-2 both exceeded the corresponding TTLC and STLC values for Cd established in Article 11 of Title 22 regulations.
 - The soluble concentration of Zn in S-2, as determined by the WET, also exceeded the established STLC for Zn.
 - This means that the soil material at the S-2 location satisfies some Article 11 criteria defining a hazardous waste.
 - The source of the metals contamination is unknown.
 - It is likely that the high concentrations of metals are confined to the debris pile and near-surface soils along the north border of the dirt lot.
 - It is recommended that the debris pile and several inches of soil beneath the pile be excavated and disposed of as hazardous waste at a Class I waste disposal facility.
- 

- Soil sample (4 - 8 samples) should ~~then~~ be collected along the length of the soil excavation beneath the removed material and analyzed for Cd, Pd, Zn, and CN to demonstrate that these elements are not present in hazardous concentrations.

Ground-Water Contamination

- Elevated concentrations of three volatile organic species (TCE, PCE, and 1,1 Dichloroethene) were detected in samples collected from one of the three on-site monitoring wells (MW-2) installed during the PSA.
- Monitoring well MW-2 is positioned hydraulically downgradient of much of the main plant building and the old storage area where both TCE and PCE were detected in soil samples collected from B-6.
- Ground water is present beneath the site at a depth of about 30 feet bgs and flows generally from east to west at an estimated velocity ranging from less than one to several tens of feet per year.
- On the basis of the available information, it is tentatively concluded that the ground-water contamination detected in MW-2 has resulted from a contaminant source(s) situated on the Monadnock property.
- Potential sources of the contamination may include the area of contaminated soil adjacent to the old drum storage area, the sanitary sewer outfall line exiting from near the south west corner of the main plant building, and other yet unidentified facilities associated with past or present site activities.
- It is recommended that an expanded program of ground-water sampling be implemented at the site to more fully evaluate the extent and character of local ground-water contamination. Four to six additional wells may be required to evaluate the contribution from identified contaminant sources, and to better define the lateral extent of the contaminant plume on the Monadnock property.

- Depending on the results of the expanded ground-water monitoring program, addition monitoring wells may ultimately need to be drilled offsite.
- The results of the expanded ground-water monitoring program may be used to evaluate alternative remedial action programs and develop specific recommendations for accomplishing aquifer restoration.

7.0 REFERENCES

① Aerial Photographs:

- ✕ Flight C-300, frames 1-131, 132, 1928;
- ✕ Flight C-3668, frames 167, 169, September 8, 1935;
- ✕ Flight C-10,000A, frames 508, 542, 543, date uncertain probably around mid-1940's;
- ✕ Flight 13990, frames 1:201, 202, July 14, 1949;
Available through Whittier College Geology Department, Fairchild Collection.

~~No~~ Aerial Atlas of Los Angeles, 1965, Aerial Map Industrial, Santa Ana, California

- Freeze, R.A., and J.A. Cherry, 1979. Groundwater, Prentice-Hall Publishers, Englewood Cliffs, New Jersey.
- Mann, J.F., Jr., 1986, Water Rights Adjudication of the Puente Basin: geol. Soc. Amer. Guidebook, Hydrgeology of Southern California, p. 17-20.
- Los Angeles County Flood Control District, 1982, San Gabriel Valley Ground-Water Contour Map, Fall, 1982.
- U.S. Geological Survey, 1981, Baldwin Park, quadrangle, 1:24,000.
- Yerkes, R.F., 1972, Geology and Oil Resources of the Western Puente Hills area, Southern California: U.S. Geol. Surv. Prof. Paper 420-C, 63 p. 4pl.

TABLE 1

EXCERPTS OF LABORATORY ANALYSES FOR WASTEWATER DISCHARGE
TO SANITARY SEWER SYSTEM BY MONADNOCK COMPANY⁽¹⁾

Sample Date	1/4/82	3/10/83	5/31/84	3/13/85	12/20/85	2/3/86
Flow Rate (gallons/day)	3807	2978	NA	3500	NA	1290
pH	11.93	9.79	10.1	10.0	8.88	10.8
Cyanide ^{2,3}	0.17	0.74	2	1.4	3.6	0.24
Cadmium ^{2,4}	13.7	1.55	3.80	1.06	26.0	0.15
Chromium ^{2,5}	12.2	0.323	0.32	0.22	5.14	0.35
Oil & Grease ²	34.6	<0.2	NA	3.4	NA	1.0

1 Obtained from files of County Sanitation Districts of Los Angeles County.

2 Values in milligram per liter (equivalent to parts per million (ppm)).

3 Maximum concentration allowable by EPA (40 CFR-Part 413) = 5 ppm.

4 Maximum concentration allowable by EPA (40 CFR-Part 413) = 1.2 ppm.

5 Maximum concentration allowable by EPA (40 CFR-Part 413) = 2.77 ppm.

TABLE 2 Laboratory Testing Programs for
Soil and Water Samples¹

<u>Sampling Location</u>	<u>Sample Type</u>	<u>Analytical Program</u>
B-1	Soil	Priority Pollutant and CAM Metals, Cyanide
B-2	Soil	Priority Pollutant and CAM Metals, Cyanide
B-3	Soil	Petroleum Hydrocarbons
B-4	Soil	Petroleum Hydrocarbons Priority Pollutant and CAM Metals, Cyanide
B-5	Soil	Petroleum Hydrocarbons Priority Pollutant and CAM Metals, Cyanide
B-6	Soil	Petroleum Hydrocarbons Priority Pollutant and CAM Metals, Cyanide, Volatile Organics
S-1	Soil	Petroleum Hydrocarbons
S-2	Soil	Priority Pollutant and CAM Metals, Cyanide
S-3	Soil	Pesticides
GW-1,2,3	Water	Priority Pollutant and CAM Metals, Volatile Organics

- ¹ See Appendix B, Laboratory Report Forms, for a complete listing of all organic and inorganic species detected by each analytical procedure.

TABLE 3
SURFACE SOIL SAMPLES

<u>Sample Number</u>	<u>Depth of Sample</u>	<u>pH</u>	<u>Description</u>
SS-1	4-6 inches	7.8	Reddish brown fine sand and dark brown clay, slightly moist, no odor.
SS-2	2-3 inches	6.3	Grayish brown silty sandy clay with organic debris, dry, no odor.
SS-3	2-3 inches	6.3	Grayish brown sandy silty clay with organic debris, dry, no odor.

Table 4 Summary of Chemical Results
Soil Samples

Constituent	Sample Location	Subsurface Samples From Borings (Results Reported in mg/kg or ppm)							Surface Soil Samples		
		B-1	B-2	B-3	B-4	B-5	B-6	B-6	S-1	S-2	S-3
1. Total Petroleum Hydrocarbons		—	—	2.0 ^b	20 ^b	7.0 ^b	4560 ^d	—	3460	—	—
2. Volatile Organic Compounds											
a) Tetrachloroethene (PCE)		—	—	—	—	—	590 ^d	0.310 ^e	—	—	—
b) Trichloroethene (TCE)		—	—	—	—	—	1.8 ^d	<0.007 ^e	—	—	—
c) 1,1,1 Trichloroethane		—	—	—	—	—	12 ^d	0.062 ^e	—	—	—
d) 1,1,2 Trichloroethane		—	—	—	—	—	0.6 ^d	<0.007 ^e	—	—	—
3. Metals											
a) Cadmium (Cd)		0.4 ^a	0.8 ^a	—	0.4 ^a	0.3 ^a	2.3 ^c	—	—	304/41.6 ^f	—
b) Lead (Pb)		1.8 ^a	2.2 ^a	—	1.6 ^a	1.6 ^a	1.8 ^c	—	—	31/4.4 ^f	—
c) Zinc (Zn)		23 ^a	25 ^a	—	20 ^a	18 ^a	23 ^c	—	—	1850/270 ^f	—
4. Cyanide (CN)		0.32 ^a	0.88 ^a	—	0.1 ^{a,8}	less than 0.1 ^a	0.66 ^c	—	—	75.0 ^f	—
5. Pesticides (Organochlorines)		—	—	—	—	—	—	—	—	—	No compounds detected

^a Compositied Sample From 1-Foot, 5-Foot and 10-Foot Depths

^b Sample Collected From 1-Foot Depth

^c Compositied Sample From 3-Foot, 5-Foot and 10-Foot Depths

^d Sample collected at 3-Foot Depth

^e Sample collected at 10-Foot Depth

^f First value represents total metal concentration,
Second value represents soluble metal concentration

⁸ Verbal result received by telephone

Table 5 Summary of Chemical Results
Ground-water Samples (mg/l)

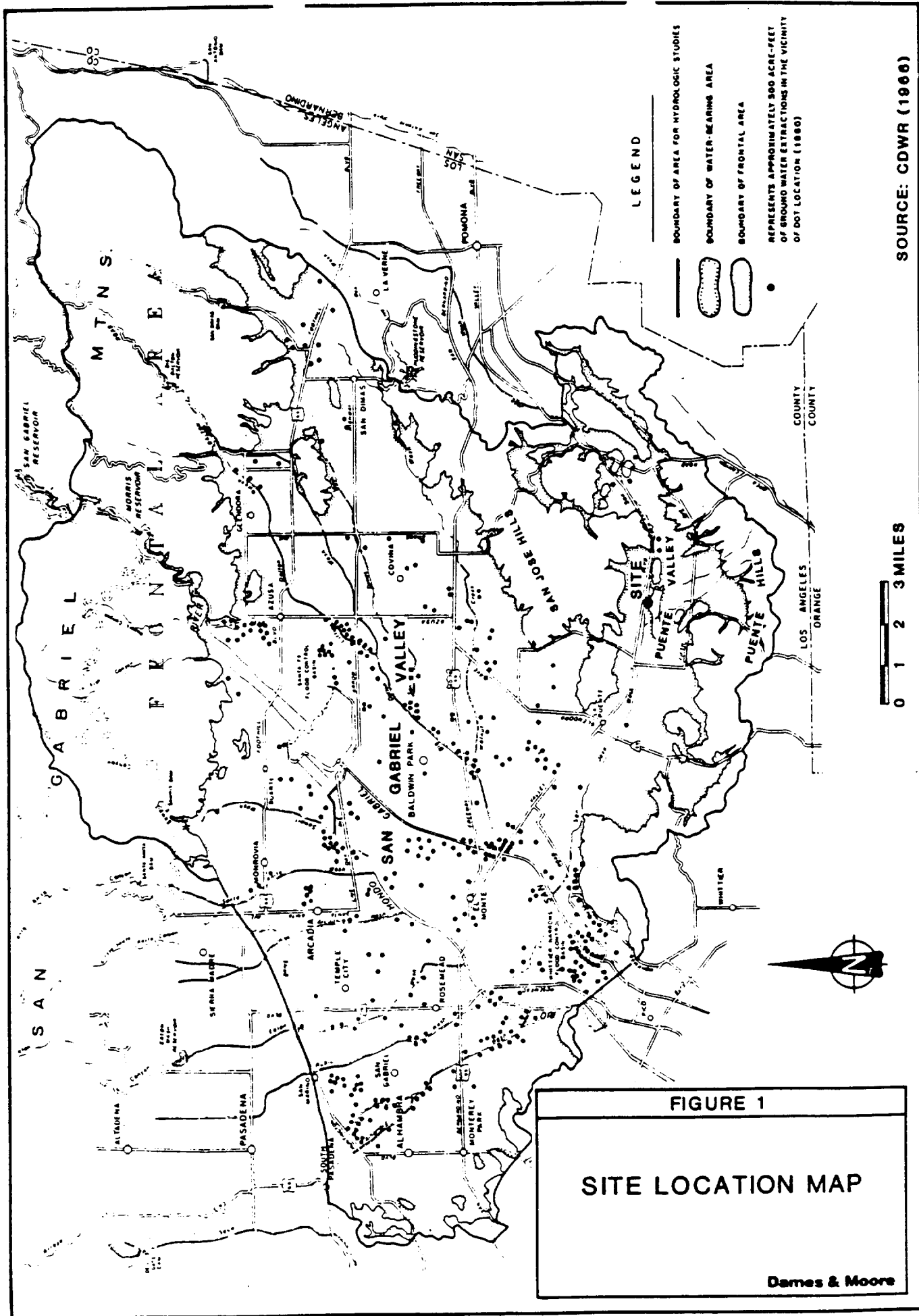
<u>Volatile Organic Compounds</u>	<u>MW-1</u>	<u>MW-2</u>	<u>MW-3</u>
Trichloroethene (TCE)	<0.025	0.71	<0.005
Tetrachloroethene (PCE)	<0.025	0.31	<0.005
1,1 Dichloroethene	<0.025	0.38	<0.005

less than .1

• .005

• no limits

• no limits



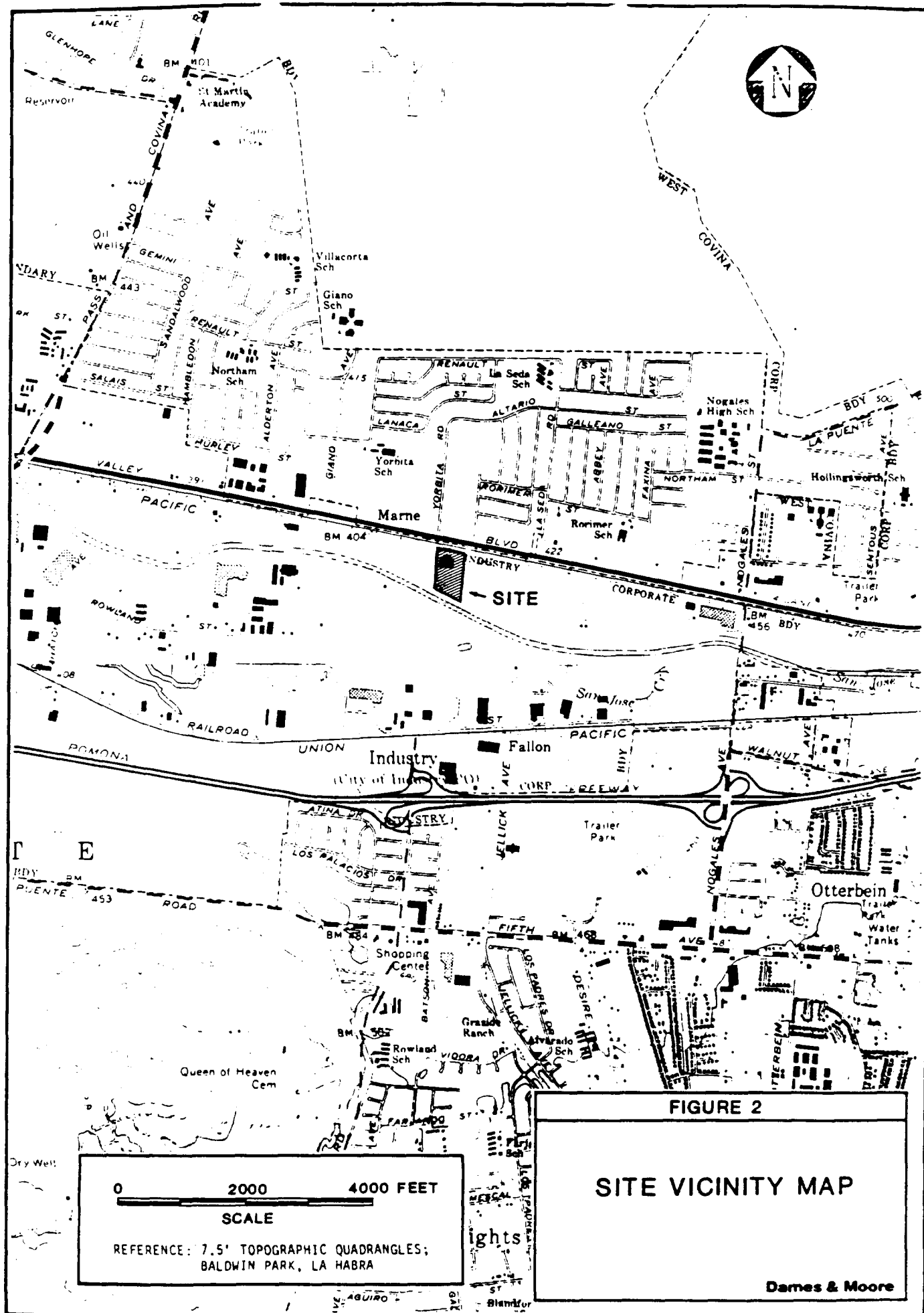


FIGURE 2

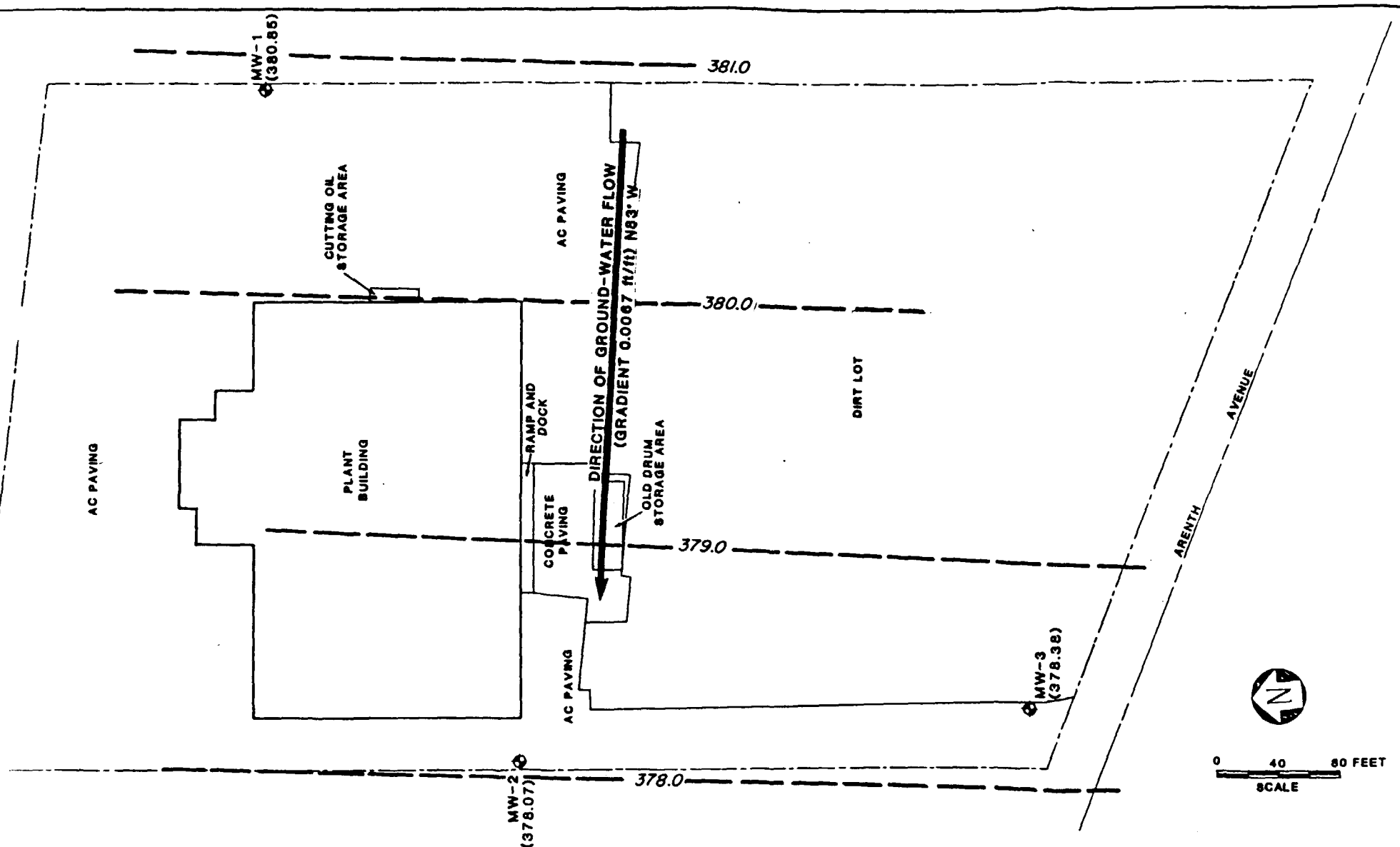
SITE VICINITY MAP

Dames & Moore

MAJOR DIVISIONS			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	<u>LIQUID LIMIT LESS THAN 50</u>		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	<u>LIQUID LIMIT GREATER THAN 50</u>		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

FIGURE 4
UNIFIED SOIL CLASSIFICATION SYSTEM



EXPLANATION:

— 380.0 — LINE OF EQUAL ELEVATION IN GROUND-WATER LEVEL

MW-1  GROUND-WATER MONITORING WELL

(380.86) WATER LEVEL ELEVATION IN FEET (MSL)

BASE FROM SURVEY PERFORMED BY
H.M. SCOTT AND ASSOCIATES INC.,
6/30/88.

FIGURE 5

**GROUND-WATER
CONTOUR MAP
(UPPERMOST
SATURATED ZONE)**

Dames & Moore

APPENDIX A

LOGS OF BORINGS

BORING 1

SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER

DEPTH FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (PID)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
			0	7.8	31	1	1-1	■
5			0	8.0	25	5	1-2	■
10			0	-	24	10	1-3	■
15								

DESCRIPTION

DARK BROWN SILTY CLAY, SLIGHTLY MOIST, NO ODOR
LIGHT BROWN AND GRAY MOTTLED SANDY CLAY, SLIGHTLY MOIST,
NO ODOR, MATERIAL HAS FINE PINNACLE STRUCTURE
LIGHT BROWN SANDY CLAY, SLIGHTLY MOIST, NO ODOR
BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 23, 1986

BORING 2

SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER

DEPTH FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (PID)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
			0	6.9	38	1	2-1	■
5			0	7.8	18	5	2-2	■
10			0	7.8	20	10	2-3	■
15								

DESCRIPTION

LIGHT BROWN SILTY CLAY, WITH ORGANIC MATERIAL, (FROD FIELD),
DRY, NO ODOR
DARK BROWN SILTY, SANDY CLAY, MOIST, NO ODOR
LIGHT BROWN AND GRAY MOTTLED SANDY CLAY, SLIGHTLY MOIST,
VERY SLIGHT ODOR?
LIGHT BROWN SANDY CLAY AND CLAYEY SAND, MOIST, NO ODOR
BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 23, 1986

BORING 3

SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER

DEPTH FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (PID)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
			1	-	19	1	3-1	■
5			0	-	9	5	3-2	■
10			0	-	52	10	3-3	■
15								

DESCRIPTION

LIGHT BROWN SANDY CLAY AND DARK BROWN SILTY CLAY, (FILL ?),
MOIST, NO ODOR
BROWN SANDY CLAY, SLIGHTLY MOIST, NO ODOR
BEDDING LIGHT BROWN SANDY GRAVEL, GRAVEL UP TO
1.5" IN DIAMETER, DRY, NO ODOR
BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 24, 1986

FIGURE A-1
LOG OF BORING

BORING 4

**SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER**

DEPTH METERS FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (did)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
			0	7.4	36	1	1	■
5			0.5	7.6	10	5	2	■
10			0	7.6	50	10	3	■
15								

DESCRIPTION

DARK BROWN SILTY SANDY CLAY, SLIGHTLY MOIST, NO ODOR

LIGHT BROWN AND GRAY MOTTLED SILTY SANDY CLAY,
VERY SLIGHTLY MOIST, NO ODOR

LIGHT BROWN CLAYEY SAND AND SANDY CLAY, SLIGHTLY MOIST,
NO ODOR

BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 23, 1986

BORING 5

**SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER**

DEPTH METERS FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (did)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
			1	7.7	34	1	5-1	■
5			0	7.9	18	5	5-2	■
10			0	8.3	41	10	5-3	■
15								

DESCRIPTION

DARK BROWN SANDY CLAY, MOIST, NO ODOR

LIGHT BROWN AND GRAY BROWN MOTTLED SANDY CLAY,
SLIGHTLY MOIST, NO ODOR

BROWN FINE TO COARSE CLAYEY SAND AND GRAVEL, DRY, NO ODOR

BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 23, 1986

BORING 6

**SAMPLING METHOD: SPRAGUE AND HENWOOD
DRILLING METHOD: 8" HOLLOW STEM AUGER**

DEPTH METERS FEET	ANALYTICAL DATA	SAMPLE DATA						SOIL TYPE
		HNU (did)	SAMPLE	SOIL pH	BLOWS PER FOOT	SAMPLE DEPTH	SAMPLE NUMBER	SAMPLE TYPE
					25	1		□
5			200	-	32	3	6-1	■
			110	6.8	30	5	6-2	■
10								
			40	7.3	51	10	6-3	■
15								

DESCRIPTION

BROWN SANDY SILTY CLAY, SOME ORGANIC MATERIAL, DRY

GRAY BROWN SILTY SANDY CLAY, SLIGHTLY MOIST, SLIGHT ODOR

GRAY AND BROWN MOTTLED SANDY CLAY, SLIGHTLY MOIST,
SLIGHT ODOR

AS ABOVE WITH VERY FINE GRAVEL IN CLAYEY MATRIX
TAN FINE TO COARSE SAND WITH SOME GRAVEL LENSES/LAYERS,
SLIGHTLY MOIST, NO ODOR

BORING TERMINATED AT A DEPTH OF 11.5 FEET ON JULY 23, 1986

**FIGURE A-2
LOG OF BORING**

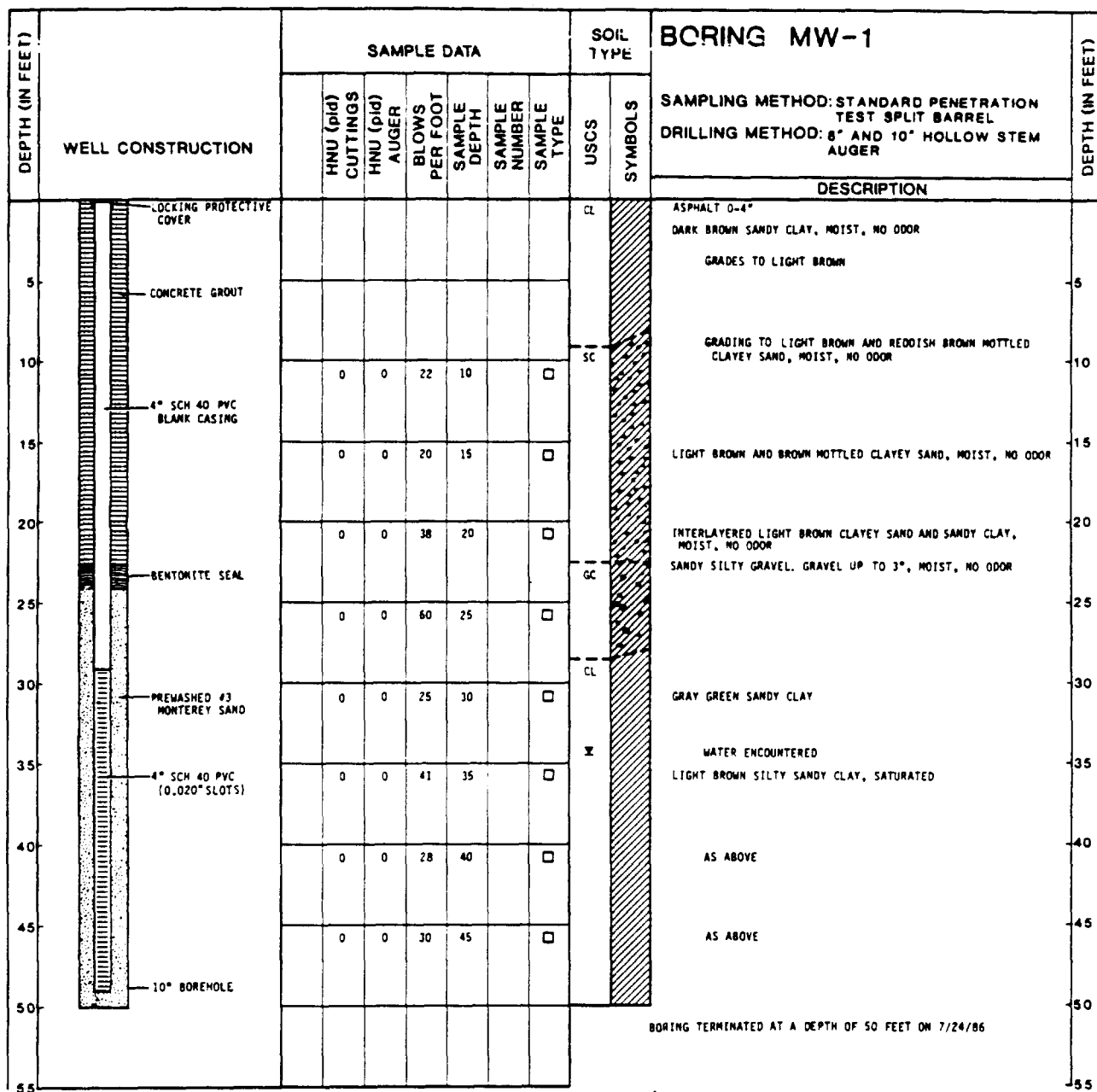


FIGURE A-3
LOG OF BORING

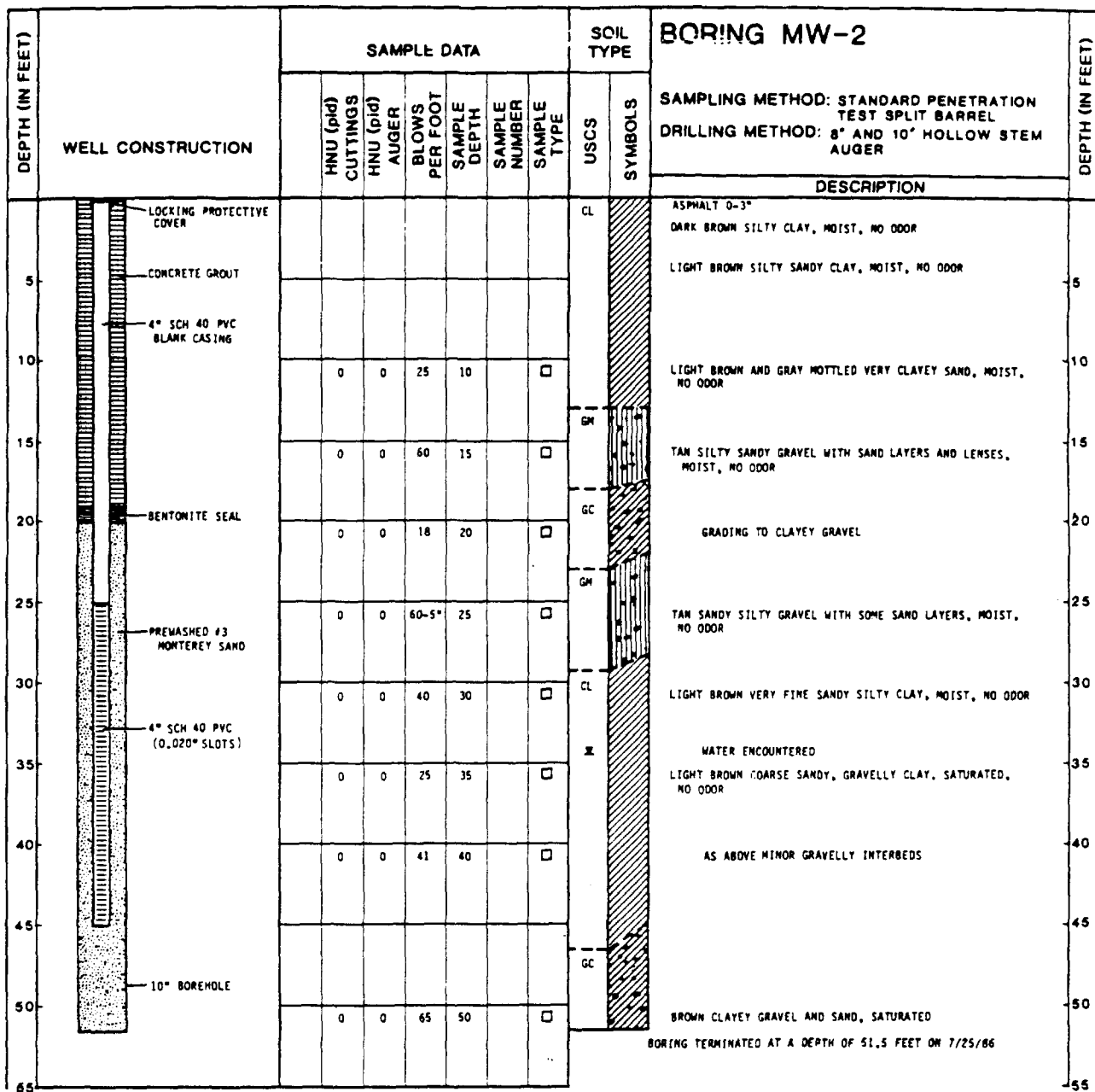


FIGURE A-4
LOG OF BORING

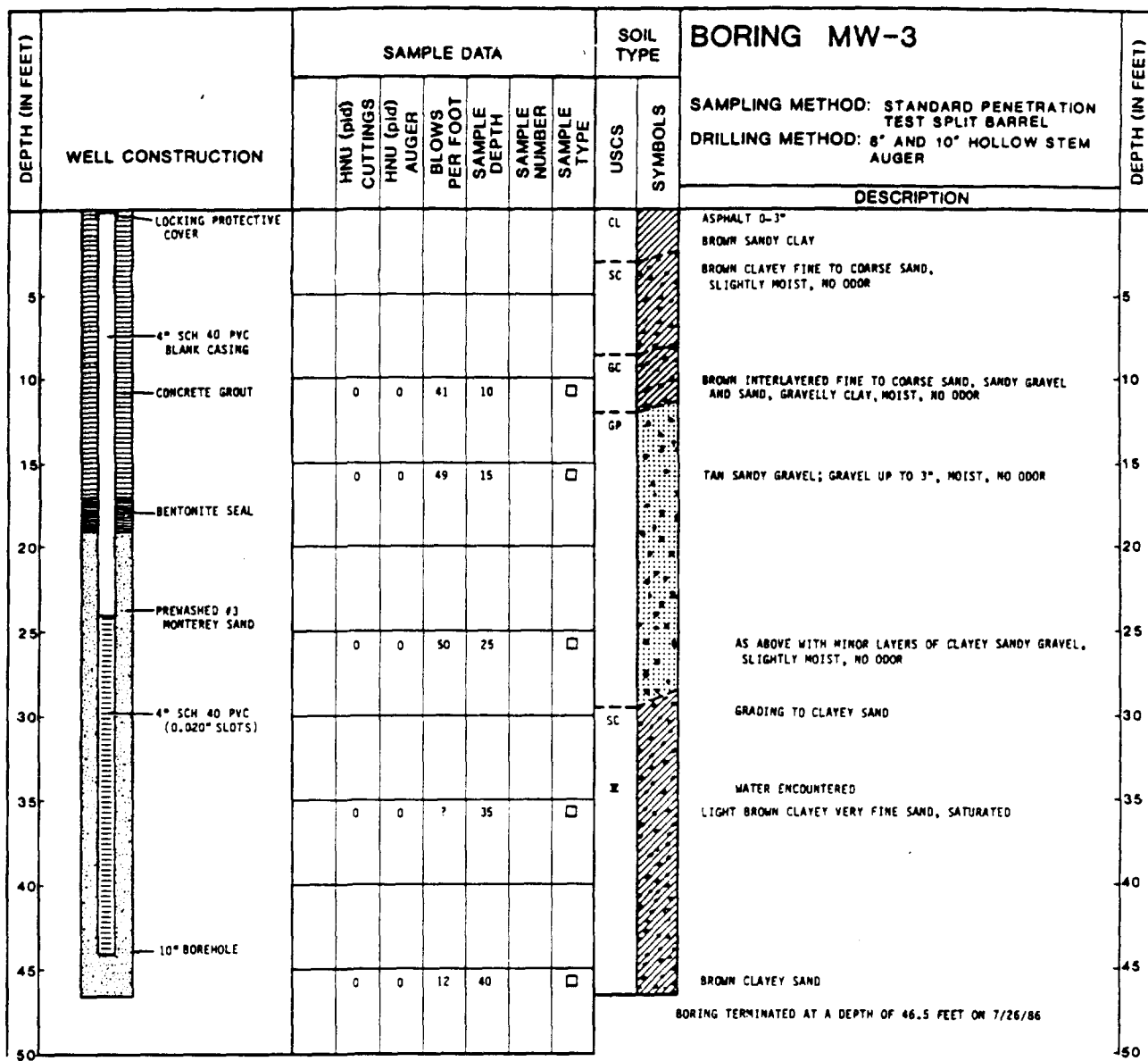


FIGURE A-5
LOG OF BORING

APPENDIX B
LABORATORY ANALYTICAL RESULTS



CHEMICAL RESEARCH LABORATORIES

RECEIVED AUG - 6 1986

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa St.
Santa Barbara, CA 93101
Attn: John Dudley

Analysis No. 860724-10
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16948

NATURE OF SAMPLE Monadnock Composite of 1-1A, 1-2A, and 1-3A

PRIORITY POLLUTANT METALS

RESULTS, in ppm

Antimony	0.2
Arsenic	1.5
Beryllium	0.3
Cadmium	0.4
Chromium, Total	7.2
Cobalt	4.4
Copper	8.5
Lead	1.8
Mercury	*ND(0.1)
Molybdenum	0.1
Nickel	6.8
Selenium	*ND(0.3)
Silver	*ND(0.1)
Thallium	2.5
Vanadium	11.
Zinc	23.
Iron	10,580.
Aluminum	6,360.
Manganese	127.
Barium	41.
Cyanide	0.32

* Not Detected (Below indicated limit of detection)

MT, LC, JK
ANALYST

[Signature]
REVIEWED & APPROVED
CHEMICAL RESEARCH LABORATORIES Date 8/4/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-11
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE 2-1A, 2-2A & 2-3A Composite

PARAMETERS

RESULTS, in ppm

Cyanide	0.88
Antimony	0.2
Arsenic	2.5
Barium	42.
Beryllium	0.3
Cadmium	0.8
Chromium, Total	8.0
Cobalt	4.1
Copper	12.
Lead	2.2
Mercury	*ND(0.1)
Molybdenum	0.1
Nickel	5.9
Selenium	*ND(0.2)
Silver	*ND(0.1)
Thallium	2.6
Vanadium	12.
Zinc	25.
Iron	10,420.
Aluminum	6,690.
Manganese	115.

*Not detected (Below indicated limit of detection.)

MT

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-18
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

3-1A

PARAMETERS

RESULTS, in ppm

Total Petroleum Hydrocarbons (418.1)

2.

JFC
ANALYST



REVIEWED & APPROVED

Jim Rommonds

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-12
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE 4-1A, 4-2A & 4-3A Composite

PARAMETERS

RESULTS, in ppm

Antimony	0.2
Arsenic	2.8
Barium	41.
Beryllium	0.3
Cadmium	0.4
Chromium, Total	6.6
Cobalt	3.9
Copper	7.0
Lead	1.6
Mercury	*ND(0.1)
Molybdenum	*ND(0.1)
Nickel	5.8
Selenium	*ND(0.3)
Silver	*ND(0.1)
Thallium	2.7
Vanadium	8.8
Zinc	20.
Iron	8,485.
Aluminum	5,170.
Manganese	97.

*Not detected (Below indicated limit of detection.)

MT

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-8370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-13
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

4-2A

PARAMETERS

RESULTS, in ppm

Total Petroleum Hydrocarbons (418.1)

20.

JFC.

ANALYST



for R. Edwards

REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-14
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE 5-1A, 5-2A & 5-3A Composite

PARAMETERS

RESULTS, in ppm

Cyanide	*ND(0.1)
Antimony	0.3
Arsenic	1.8
Barium	38.
Beryllium	0.2
Cadmium	0.3
Chromium, Total	6.4
Cobalt	3.7
Copper	7.1
Lead	1.6
Mercury	*ND(0.1)
Molybdenum	*ND(0.1)
Nickel	5.6
Selenium	*ND(0.3)
Silver	*ND(0.1)
Thallium	2.2
Vanadium	11.
Zinc	18.
Iron	7,710.
Aluminum	4,940.
Manganese	92.

*Not detected (Below indicated limit of detection.)

MT

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-15
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

5-1A

PARAMETERS

RESULTS, in ppm

Total Petroleum Hydrocarbons (418.1)

7.

JFC.
ANALYST



Lori R. ...
REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-16
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE 6-1A, 6-2A & 6-3A Composite

PARAMETERS

RESULTS, in ppm

Cyanide	0.66
Antimony	0.4
Arsenic	2.0
Barium	40.
Beryllium	0.3
Cadmium	2.3
Chromium, Total	14.
Cobalt	3.5
Copper	8.2
Lead	1.8
Mercury	*ND(0.1)
Molybdenum	*ND(0.1)
Nickel	6.8
Selenium	*ND(0.3)
Silver	*ND(0.1)
Thallium	2.9
Vanadium	11.
Zinc	23.
Iron	6,990.
Aluminum	5,010.
Manganese	102.

*Not detected (Below indicated limit of detection.)

MT

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-17
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

6-1A

PARAMETERS

RESULTS, in ppm

Total Petroleum Hydrocarbons (418.1)

4560.

JFC

ANALYST



Pam Forwards

REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-17
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

6-1A

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	mg/kg		mg/kg
Chloromethane	<0.2	1,2-Dichloropropane	<0.1
Bromomethane	<0.2	Trans-1,3-Dichloropropene	<0.1
Vinyl Chloride	<0.2	Trichloroethene	1.8
Chloroethane	<0.2	Dibromochloromethane	<0.1
Methylene Chloride	0.4*	1,1,2-Trichloroethane	0.6
Acetone	0.3*	Benzene	<0.1
Carbon Disulfide	<0.1	cis-1,3-Dichloropropene	<0.1
1,1-Dichloroethene	<0.1	2-Chloroethylvinylether	<0.2
1,1-Dichloroethane	<0.1	Bromoform	<0.1
Trans-1,2-Dichloroethene	<0.1	4-Methyl-2-Pentanone	<0.2
Chloroform	<0.1	2-Hexanone	<0.2
1,2-Dichloroethane	<0.1	Tetrachloroethene	590.**
2-Butanone	<0.2	1,1,2,2-Tetrachloroethane	<0.1
1,1,1-Trichloroethane	12.	Toluene	<0.1
Carbon Tetrachloride	<0.1	Chlorobenzene	<0.1
Vinyl Acetate	<0.2	Ethylbenzene	<0.1
Bromodichloromethane	<0.1	Styrene	<0.1
		Total Xylenes	<0.1

Surrogate Recovery (d8 toluene) 92%

< Denotes compound was not detected above the value indicated.

* At A concentration that can be attributed to laboratory contamination.

** Quantitation is based on secondary ion. This value is also based upon the previous day's PCE standard due to contamination of the system caused by this sample. This is not a recommended technique but due to circumstances was necessary to respond to the rapid results needed for assesment purposes.

CA

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86

RECEIVED AUG 13 1986



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames And Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860804-5
Sampling Date 07/23/86
Date Sample Rec'd. 08/04/86
Invoice No. 17052

NATURE OF SAMPLE Monadnock, Inc. 6-3B

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/kg		ug/kg
Chloromethane	<15	1,2-Dichloropropane	< 7
Bromomethane	<15	Trans-1,3-Dichloropropene	< 7
Vinyl Chloride	<15	Trichloroethene	< 7
Chloroethane	<15	Dibromochloromethane	< 7
Methylene Chloride	16*	1,1,2-Trichloroethane	< 7
Acetone	<15	Benzene	< 7
Carbon Disulfide	< 7	cis-1,3-Dichloropropene	< 7
1,1-Dichloroethene	< 7	2-Chloroethylvinylether	<15
1,1-Dichloroethane	< 7	Bromoform	< 7
Trans-1,2-Dichloroethene	< 7	4-Methyl-2-Pentanone	<15
Chloroform	< 7	2-Hexanone	<15
1,2-Dichloroethane	< 7	Tetrachloroethene	310
2-Butanone	<15	1,1,2,2-Tetrachloroethane	< 7
1,1,1-Trichloroethane	62*	Toluene	< 7
Carbon Tetrachloride	< 7	Chlorobenzene	< 7
Vinyl Acetate	<15	Ethylbenzene	< 7
Bromodichloromethane	< 7	Styrene	< 7
		Total Xylenes	< 7

< Denotes compound was not detected above the value indicated.

* At a concentration that can be attributed to laboratory contamination.

CA

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date 8/12



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-19
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

S-1

PARAMETERS

RESULTS, in ppm

Total Petroleum Hydrocarbons (418.1)

3,460.

JPC
ANALYST

Puri Kowanda
REVIEWED & APPROVED



CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-8370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-20
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

S-2

PARAMETERS

RESULTS, in ppm

Cyanide	75.0
Antimony	0.3
Arsenic	0.7
Barium	38.
Beryllium	0.2
Cadmium	304.
Chromium, Total	12.
Cobalt	1.9
Copper	8.4
Lead	31.
Mercury	*ND(0.1)
Molybdenum	0.2
Nickel	9.0
Selenium	*ND(0.4)
Silver	0.2
Thallium	1.2
Vanadium	4.9
Zinc	1,850.
Iron	3,470.
Aluminum	2,030.
Manganese	88.

*Not detected (Below indicated limit of detection.)

MT

ANALYST

Pam Hornsby
REVIEWED & APPROVED
Date 8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-20
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

S-2

The following analytical determinations were conducted according to the guidelines set forth in the California Administration Code, Title 22, Chapter 30, Article II (January 12, 1985). The analyses were performed on a 48 hour citric acid extract (CAC - Waste Extraction Test) for soluble metals.

PARAMETERS	STLC RESULTS, in mg/l	California Administrative Code Standard	
		STLC, in mg/l	TTLC, in mg/kg
Cadmium, Total	41.6	0.75	75.
Lead	4.4	5.	1,000.
Zinc	270.	250.	5,000.

MT

ANALYST

P. J. [Signature]



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/13/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-21
Sampling Date 07/23/86
Date Sample Rec'd. 07/24/86
Invoice No. 16749

NATURE OF SAMPLE

S-3

EPA METHOD 608 PRIORITY POLLUTANT PESTICIDE AND AROCLOR DATA SHEET

Alpha-BHC	ug/l	Endosulfan Sulfate	ug/l
Beta-BHC	<0.1	4,4' - DDT	<0.1
Delta-BHC	<0.1	Methoxychlor	<0.1
Gamma-BHC (Lindane)	<0.1	Endrin Ketone	<0.1
Heptachlor	<0.1	Chlordane	<0.1
Aldrin	<0.1	Toxaphene	<0.1
Heptachlor Epoxide	<0.1	Aroclor - 1016	<1.
Endosulfan I	<0.1	Aroclor - 1221	<1.
Dieldrin	<0.1	Aroclor - 1232	<1.
4,4' - DDE	<0.1	Aroclor - 1242	<1.
Endrin	<0.1	Aroclor - 1248	<1.
Endosulfan II	<0.1	Aroclor - 1254	<1.
4,4' - DDD	<0.1	Aroclor - 1260	<1.
Endrin Aldehyde	<0.1		

< Denotes compound was not detected above the value indicated.

KG
ANALYST

Reviewed & Approved
Date 5/13/86
CHEMICAL RESEARCH LABORATORIES



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-14
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 16749

NATURE OF SAMPLE Monadnock, Inc. - City of Industry - MMW-1A

PARAMETERS

RESULTS, in ppm

Antimony	*ND(0.1)
Arsenic	0.05
Barium	1.3
Beryllium	*ND(0.1)
Cadmium	*ND(0.1)
Chromium, Total	0.2
Chromium, Hex.	*ND(0.2)
Cobalt	0.1
Copper	0.3
Lead	*ND(0.1)
Mercury	*ND(0.03)
Molybdenum	*ND(0.1)
Nickel	0.2
Selenium	*ND(0.1)
Silver	*ND(0.1)
Thallium	*ND(0.1)
Vanadium	0.5
Zinc	0.6
Iron	192.
Aluminum	117.
Manganese	4.4

*Not detected (Below indicated limit of detection.)

TR

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames And Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860728-11
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 17051

NATURE OF SAMPLE Monadnock, Inc. - City of Industry - OMW-1A

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/l		ug/l
Chloromethane	<50	1,2-Dichloropropane	<25
Bromomethane	<50	Trans-1,3-Dichloropropene	<25
Vinyl Chloride	<50	Trichloroethene	<25
Chloroethane	<50	Dibromochloromethane	<25
Methylene Chloride	<25	1,1,2-Trichloroethane	<25
Acetone	<50	Benzene	<25
Carbon Disulfide	<25	cis-1,3-Dichloropropene	<25
1,1-Dichloroethene	<25	2-Chloroethylvinylether	<50
1,1-Dichloroethane	<25	Bromoform	<25
Trans-1,2-Dichloroethene	<25	4-Methyl-2-Pentanone	<50
Chloroform	<25	2-Hexanone	<50
1,2-Dichloroethane	<25	Tetrachloroethene	<25
2-Butanone	<50	1,1,2,2-Tetrachloroethane	<25
1,1,1-Trichloroethane	<25	Toluene	<25
Carbon Tetrachloride	<25	Chlorobenzene	<25
Vinyl Acetate	<50	Ethylbenzene	<25
Bromodichloromethane	<25	Styrene	<25
		Total Xylenes	<25

< Denotes compound was not detected above the value indicated.

CA

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/1/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-15
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 16749

NATURE OF SAMPLE

Monadnock, Inc. - City of Industry - MMW-2A

PARAMETERS

RESULTS, in ppm

Antimony	*ND(0.1)
Arsenic	*ND(0.01)
Barium	0.5
Beryllium	*ND(0.1)
Cadmium	*ND(0.1)
Chromium, Total	0.2
Chromium, Hex.	*ND(0.2)
Cobalt	*ND(0.1)
Copper	*ND(0.1)
Lead	*ND(0.1)
Mercury	*ND(0.03)
Molybdenum	*ND(0.1)
Nickel	*ND(0.1)
Selenium	*ND(0.1)
Silver	*ND(0.1)
Thallium	*ND(0.1)
Vanadium	0.2
Zinc	0.2
Iron	52.
Aluminum	36.
Manganese	1.4

*Not detected (Below indicated limit of detection.)

TR

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames And Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860728-12
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 17051

NATURE OF SAMPLE

Monadnock, Inc. - City of Industry - OMW-2A

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	mg/l		mg/l
Chloromethane	<0.1	1,2-Dichloropropane	<0.05
Bromomethane	<0.1	Trans-1,3-Dichloropropene	<0.05
Vinyl Chloride	<0.1	Trichloroethene	0.71
Chloroethane	<0.1	Dibromochloromethane	<0.05
Methylene Chloride	<0.1	1,1,2-Trichloroethane	<0.05
Acetone	<0.05	Benzene	<0.05
Carbon Disulfide	<0.05	cis-1,3-Dichloropropene	<0.05
1,1-Dichloroethene	0.38	2-Chloroethylvinylether	<0.10
1,1-Dichloroethane	<0.05	Bromoform	<0.05
Trans-1,2-Dichloroethene	<0.05	4-Methyl-2-Pentanone	<0.10
Chloroform	<0.05	2-Hexanone	<0.10
1,2-Dichloroethane	<0.05	Tetrachloroethene	0.31
2-Butanone	<0.10	1,1,2,2-Tetrachloroethane	<0.05
1,1,1-Trichloroethane	<0.05	Toluene	<0.05
Carbon Tetrachloride	<0.05	Chlorobenzene	<0.05
Vinyl Acetate	<0.10	Ethylbenzene	<0.05
Bromodichloromethane	<0.05	Styrene	<0.05
		Total Xylenes	<0.05

< Denotes compound was not detected above the value indicated.

CA

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/1/86



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames and Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860724-16
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 16749

NATURE OF SAMPLE Monadnock, Inc. - City of Industry - MMW-3A

PARAMETERS

RESULTS, in ppm

Antimony	*ND(0.1)
Arsenic	*ND(0.02)
Barium	*ND(0.1)
Beryllium	*ND(0.1)
Cadmium	*ND(0.1)
Chromium, Total	*ND(0.1)
Chromium, Hex.	*ND(0.1)
Cobalt	*ND(0.1)
Copper	0.1
Lead	*ND(0.1)
Mercury	*ND(0.03)
Molybdenum	*ND(0.1)
Nickel	*ND(0.1)
Selenium	*ND(0.1)
Silver	*ND(0.1)
Thallium	*ND(0.1)
Vanadium	0.2
Zinc	0.2
Iron	50.
Aluminum	29.
Manganese	1.5

*Not detected (Below indicated limit of detection.)

Te
ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date



CHEMICAL RESEARCH LABORATORIES

LABORATORY REPORT

11631 SEABOARD CIRCLE (213) 598-0458
STANTON, CA 90680 (714) 898-6370

From: Dames And Moore
812 Anacapa Street
Santa Barbara, Ca. 93101
ATTN: John Dudley

Analysis No. 860728-13
Sampling Date 07/28/86
Date Sample Rec'd. 07/28/86
Invoice No. 17051

NATURE OF SAMPLE

Monadnock, Inc. - City of Industry - OMW-3A

EPA METHODS 624/8240 VOLATILE POLLUTANTS DATA SHEET

	ug/l		ug/l
Chloromethane	<10	1,2-Dichloropropane	< 5
Bromomethane	<10	Trans-1,3-Dichloropropene	< 5
Vinyl Chloride	<10	Trichloroethene	< 5
Chloroethane	<10	Dibromochloromethane	< 5
Methylene Chloride	< 5*	1,1,2-Trichloroethane	< 5
Acetone	<10*	Benzene	< 5
Carbon Disulfide	< 5	cis-1,3-Dichloropropene	< 5
1,1-Dichloroethene	< 5	2-Chloroethylvinylether	<10
1,1-Dichloroethane	< 5	Bromoform	< 5
Trans-1,2-Dichloroethene	< 5	4-Methyl-2-Pentanone	<10
Chloroform	< 5	2-Hexanone	<10
1,2-Dichloroethane	< 5	Tetrachloroethene	< 5
2-Butanone	<10	1,1,2,2-Tetrachloroethane	< 5
1,1,1-Trichloroethane	< 5*	Toluene	< 5
Carbon Tetrachloride	< 5*	Chlorobenzene	< 5
Vinyl Acetate	<10	Ethylbenzene	< 5
Bromodichloromethane	< 5	Styrene	< 5
		Total Xylenes	< 5

< Denotes compound was not detected above the value indicated.

* Denotes compound was background subtracted (2 x Background Amt.)

CA

ANALYST



REVIEWED & APPROVED

CHEMICAL RESEARCH LABORATORIES

Date

8/12